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ABSTRACT OF THE INVENTION

Method, apparatus and software for processing sets of routing information in a router having a plurality of memory units accessible via separate access paths. The sets of routing information are typically routes received from neighbour nodes. The method includes creating a plurality of non-identical routing information subsets from each received set of routing information, accessing the memory units via the separate access paths and storing the routing information subsets created from a common set of routing information in respective ones of the plurality of memory units. By providing a distributed memory architecture for storing routing information, an increase in a router's memory requirements can be met by increasing the number of memory units. In addition, the present invention discloses embodiments which distribute computational complexity among multiple processing units in communication with the plurality of memory units, thereby allowing computation of output routing information bases and forwarding tables to occur in parallel.